



## SEQUENCE LISTING

<110> LU, YI  
LI, JING

<120> NUCLEIC ACID ENZYME BIOSENSORS FOR IONS

<130> 09800240-0078

<140> 10/702,676

<141> 2002-05-10

<150> 09/605,558

<151> 2000-06-27

<160> 88

<170> PatentIn Ver. 3.2

<210> 1

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Trans-cleaving  
deoxyribozyme 17E

<400> 1

catctcttct ccgagccggt cgaaatagtg agt

33

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic chimeric  
substrate

<220>

<223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
substrate

<220>

<221> modified\_base

<222> (10)

<223> ribonucleotide base

<400> 2

actcactata ggaagagatg

20

<210> 3

<211> 15

<212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer

<400> 3  
 gtgccaagct taccg 15

<210> 4  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer

<400> 4  
 ctgcagaatt ctaatacgac tcactatagg aagagatggc gac 43

<210> 5  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer

<220>  
 <223> Description of Combined DNA/RNA Molecule: Primer

<220>  
 <221> modified\_base  
 <222> (28)  
 <223> ribonucleotide base

<400> 5  
 gggacgaatt ctaatacgac tcactata 28

<210> 6  
 <211> 97  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic DNA Template

<220>  
 <221> modified\_base  
 <222> (20)..(59)  
 <223> variable nucleotides

<400> 6  
 gtgccaagct taccgtcacn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnng 60

agatctcgcc atctcttcct atagtgagtc gtattag

97

<210> 7

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Variant of deoxyribozyme named 17E1

<400> 7

catctctttt gtcagcgact cgaaatagtg agt

33

<210> 8

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA

<220>

<221> modified\_base

<222> (2)..(4)

<223> variable bases complementary to positions 8-10

<220>

<221> modified\_base

<222> (8)..(10)

<223> variable bases complementary to positions 2-4

<400> 8

tnnnagcnnn tcgaaatagt

20

<210> 9

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA sequence

<220>

<221> modified\_base

<222> (2)..(4)

<223> variable bases complementary to positions 8-10

<220>

<221> modified\_base

<222> (8)..(10)

<223> variable bases complementary to positions 2-4

<400> 9  
 tnnnagcnnn acgaa 15

<210> 10  
 <211> 15  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Class II  
 Co-DNA sequence

<400> 10  
 ,acccaagaag ggggtg 15

<210> 11  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Rh-17DDS

<400> 11  
 actcactata ggaagagatg 20

<210> 12  
 <211> 97  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<220>  
 <221> modified\_base  
 <222> (39)..(78)  
 <223> variable nucleotides

<400> 12  
 ctaatacgac tcactatagg aagagatggc gacatctcnn nnnnnnnnnn nnnnnnnnnn 60  
 nnnnnnnnnn nnnnnnnngt gacggtaagc ttggcac 97

<210> 13  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA  
  
 <400> 13  
 ctgcagaatt ctaatacgac tcactatagg aagagatggc gac 43  
  
 <210> 14  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA  
  
 <400> 14  
 atctcttttg tcagcgactc gaaatagtgt gttgaagcag ctctagtgac 50  
  
 <210> 15  
 <211> 49  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA  
  
 <400> 15  
 agccatagtt ctaccagcgg ttcgaaatag tgaagtgttc gtgactatc 49  
  
 <210> 16  
 <211> 49  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA  
  
 <400> 16  
 ggccatagtt ctaccagcgg ttcgaaatag tgaaatgttc gtgactatc 49  
  
 <210> 17  
 <211> 51  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA  
  
 <400> 17  
 gccagattag ttctaccagc gggtcgaaat agtgaaatgt tcgtgactat c 51  
  
 <210> 18  
 <211> 50

<212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 18  
 atctccaaag atgccagcat gctattctcc gagccggtcg aaatagtgac 50

<210> 19  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 19  
 atctccaaag atgcctgcat gctattctcc gagccggtcg aaatagtgac 50

<210> 20  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 20  
 atctcgtctc cgagccggtc gaaatagta ggtgtttcta ttcgggtgac 50

<210> 21  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 21  
 atcaccttct ccgagccggc cgaaatagta gtttttagta tatctgtgac 50

<210> 22  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 22  
 atctcaggtg ttggctgctc tcgcggtggc gagaggtagg gtgatgtgac 50

<210> 23  
 <211> 14  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 23  
 ggtaagcttg gcac 14

<210> 24  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 24  
 ctgcagaatt ctaatacgac gcactatagg aagagatggc gac 43

<210> 25  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 25  
 atctcttgta ttagctacac tgtagtgga tcgggtctaa tctcggtgac 50

<210> 26  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 26  
 gtctcttgta ttagctacac tgtagtgga tcgggtctaa tctcggtgac 50

<210> 27  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 27  
 atctcctgta ttagctacac tgtagtgga tcgggtctaa tctcggtgac 50

<210> 28  
 <211> 49  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 28  
 atctcctgta ttagctacac tgtagtgga aacgttatca ttcggtgac 49

<210> 29  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 29  
 atctcctgac ccaagaaggg gtgtcaatct aatccgtcaa ccatg 45

<210> 30  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 30  
 atctcctgac ccaagaaggg gtgtcaatca aatccgtcaa ccatg 45

<210> 31  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 31  
 atctcctgac ccaagaaggg gtgtcaatct aatccgtaca accatgacgg taag 54

<210> 32  
 <211> 52  
 <212> DNA  
 <213> Artificial Sequence



<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA  
  
 <400> 32  
 atctcttgac ccaagaaggg gtgtcaatct aatccgtcaa ggatgcggta ag 52  
  
 <210> 33  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA  
  
 <400> 33  
 atctcaggtg ttggctgctc ccgcggtggc gggaggtagg gtgatgtgac 50  
  
 <210> 34  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA  
  
 <400> 34  
 atctcaggtg ttggcatctc ccgcggtggc gagaggtagg gtgatgtgac 50  
  
 <210> 35  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA  
  
 <400> 35  
 atctcaggtg ttggctgctc tcgcggtggc gagaggtagg gtcagtgtgac 50  
  
 <210> 36  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA  
  
 <400> 36  
 atctcgagt cgaagcttca ctgttagtgc ggacgggtag acttcgtgac 50

<210> 37  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 37  
 atttcttctg aatcctcaat gttagtggac ctagtcgtag tcgatgtgac 50

<210> 38  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 38  
 atctcgagc cagttagcat aatcttctga atcctcaatg ttagtgtgac 50

<210> 39  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 39  
 atctcgggtg tggctggata gagccggtag gccctatcgt aggggtgtgac 50

<210> 40  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 40  
 gtctcttttg tccgcgactc gaaatagtgt gttgaagcag ctctagtgtgac 50

<210> 41  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 41  
 agccatagtt ctaccagcgg ttcgaaatag tgaagtgttc gtgactatcg gtaa 54

<210> 42  
 <211> 14  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 42  
 ggtaagcttg gcac 14

<210> 43  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 43  
 ttttgtcagc gactcgaaat agtgtgttga agcagctcta 40

<210> 44  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 44  
 ttttgtcagc gactcgaaat agtgtgttga agccgctcta 40

<210> 45  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 45  
 ttttgtcagc gactcgaaat agtgtattgc agtagatcta 40

<210> 46  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 46

ttttgtcagc gactcgaaat agtgtgttac agttgcccta

40

<210> 47

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 47

ttttgtcagc gactcgaaat agagagtcga cacacctctc

40

<210> 48

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 48

ttttgtcagc gactcgaaat agttagttga accagctctc

40

<210> 49

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 49

ttttgtcagc gactcgaaat agtgagtaag aggagctatc

40

<210> 50

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 50

ttttgtcagc gactcgaaat agtgagggga aacagctctc

40

<210> 51  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 51  
 ttttgtcagc gactcgaaat agttagttga acacctctc 39

<210> 52  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 52  
 ttttgtcagc gactcgaaat attgagttga agcagatctc 40

<210> 53  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 53  
 ttttgtcagc gacacgaaat agtgagttga ggcggcgctg 40

<210> 54  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 54  
 tttttgcagc gacacgaaat agttagttga agaagctctt 40

<210> 55  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 55  
 ttttgtcagc gactcgaaat agtcagttgt agcagctctt 40

<210> 56  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 56  
 ttttgtcagc gactcgaaat agtgcgtaga accagctctc 40

<210> 57  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 57  
 ttttgtcagc gacacgaaat agtgcggtgt atctgccctc 40

<210> 58  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 58  
 ttttgtcagc gacacgaaat agtgtgatgt agtagctctc 40

<210> 59  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 59  
 ttttgtcagc gacacgaaat agtgtgacga atcatctc 38

<210> 60  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 60  
 ttttgtcagc gacacgaaat agtgtgttta agcgctctc 39

<210> 61  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 61  
 ttttgtcagc gacacgaaat agtgtgttga agcacgtctc 40

<210> 62  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 62  
 ttttgtcagc gactcgaaat agtttgttga agcagctctc 40

<210> 63  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 63  
 ttttgtcagc gactcgaaat agtgtattac agcagctctc 40

<210> 64  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 64  
 ttttgtcagc gactcgaaat agtgtgttga aacagctatc 40

<210> 65  
 <211> 40

<212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 65  
 ttgtgcatgc tactcgtaat tgtgtctcga agcagctctc 40

<210> 66  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 66  
 gtcagtcagg tactcgaaaa atagtgttca agccgctgtc 40

<210> 67  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 67  
 tttttgcagc gactcgaaag attgtgttga ggcggctatc 40

<210> 68  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 68  
 ttctctcagc gactaaaaat agtgtgttga agcccctctc 40

<210> 69  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 69  
 tattgtcagt gacccaaaat agtatgttga agcagctctg 40



<210> 70  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Zn-DNA

<400> 70  
 ttttgtcagc tactgaaata gtgttttgaa gaagtcctg 39

<210> 71  
 <211> 15  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<220>  
 <221> modified\_base  
 <222> (8)  
 <223> ribonucleotide base

<400> 71  
 tcactatagg aagag 15

<210> 72  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 72  
 ctcttcagcg atccggaacg gcacccatgt tagtga 36

<210> 73  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<220>  
 <221> modified\_base  
 <222> (8)  
 <223> ribonucleotide base

<400> 73  
 tcactataag aagagatgg 19

<210> 74  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 74  
 acacatctct gaagtagcgc cgccgtatag tgacgct 37

<210> 75  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 75  
 ggagagagau gggugcg 17

<210> 76  
 <211> 31  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 76  
 cgcacccagg ctagctacaa cgactctctc c 31

<210> 77  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 77  
 aaguaacuag agaugga 17

<210> 78  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 78  
 cgcaccctcc gagccggacg aagttactt 29

<210> 79  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric

substrate

<220>  
 <221> modified\_base  
 <222> (9)  
 <223> ribonucleotide base

<400> 79  
 ctcactatag gaagagatg 19

<210> 80  
 <211> 41  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<400> 80  
 catctcttaa cggggctgtg cggctaggaa gtaatagtga g 41

<210> 81  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric  
 substrate

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric  
 substrate

<220>  
 <221> modified\_base  
 <222> (10)  
 <223> ribonucleotide base

<400> 81  
 actcactata ggaagagatg 20

<210> 82  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric

```

substrate

<220>
<223> Description of Combined DNA/RNA Molecule: Synthetic chimeric
      substrate

<400> 82
catctcttct ccgagccggt cgaaatagtg agt
33

<210> 83
<211> 107
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Combined DNA/RNA Molecule: Synthetic chimeric
      oligonucleotide

<220>
<223> Description of Artificial Sequence: Predicted
      secondary structure of the G3 deoxyribozyme

<220>
<221> modified_base
<222> (28)
<223> ribonucleotide base

<220>
<221> modified_base
<222> (67)
<223> variable nucleotide

<220>
<221> modified_base
<222> (69)..(74)
<223> variable nucleotide

<220>
<221> modified_base
<222> (80)..(82)
<223> variable nucleotide

<220>
<221> modified_base
<222> (85)..(89)
<223> variable nucleotide

<400> 83
gggacgaatt ctaatacgac tcactatagg aagagatggc gacaactctt tacccaagaa 60
ggggtgngnn nnnngctacn nnatnnnnnt gacggtagct tggcacc
107

<210> 84
<211> 45
<212> DNA
<213> Artificial Sequence

```

<220>  
 <223> Description of Artificial Sequence: Synthetic Co-DNA

<400> 84  
 cactatagga agagatggcg acatctcttg acccaagaag gggtg 45

<210> 85  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Combined DNA/RNA Molecule: Synthetic chimeric substrate

<220>  
 <223> Description of Artificial Sequence: Synthetic chimeric oligonucleotide

<220>  
 <221> modified\_base  
 <222> (22)  
 <223> ribonucleotide base

<400> 85  
 tgtcaactcg tgactcacta taggaagaga tgtgtcaact cgtg 44

<210> 86  
 <211> 12  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer

<220>  
 <223> see specification as filed for detailed description of preferred embodiments

<400> 86  
 cacgagttga ca 12

<210> 87  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic oligonucleotide 17E-C

<400> 87  
 catctcttcc ccgagccggt cgaaatagtg agt 33

<210> 88  
<211> 12  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<220>  
<223> see specification as filed for detailed description of  
preferred embodiments

<400> 88  
cacgagttga ca

12